REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY (Leave blank)

2. REPORT DATE: Aug 94

3. REPORT TYPE AND DATES COVERED

4. TITLE AND SUBTITLE: Urine testing in 3 states among 3 groups of offenders

5. FUNDING NUMBERS

6. AUTHOR(S): John G. ~~Worley~~ Worley

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

AFIT Students Attending:

University of Maryland

8. PERFORMING ORGANIZATION REPORT NUMBER

AFIT/CI/CIA

94-133

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

DEPRTMENT OF THE AIR FORCE
AFIT/CI
2950 P STREET
WRIGHT-PATTERSON AFB OH 45433-7765

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

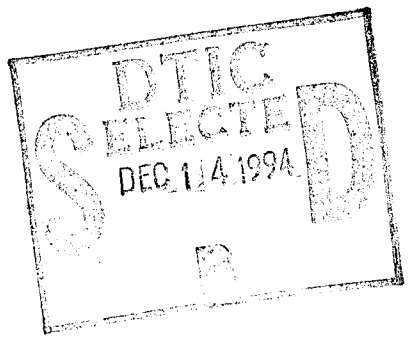
11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT

Approved for Public Release IAW 190-1
Distribution Unlimited
MICHAEL M. BRICKER, SMSgt, USAF
Chief Administration

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)



19941207 079

14. SUBJECT TERMS

15. NUMBER OF PAGES: 67

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT

URINE TESTING IN THREE STATES AMONG THREE GROUPS OF OFFENDERS

by

John Gregory Worley

Thesis submitted to the Faculty of the Graduate School
of The University of Maryland in partial fulfillment
of the requirements for the degree of
Master of Arts
1994

Advisory Committee:

Associate Professor Doris MacKenzie, Chairman/Advisor
Professor Charles Welford
Associate Professor Denise Gottfredson

ABSTRACT

Title of Thesis: URINE TESTING AMONG THREE GROUPS OF OFFENDERS IN THREE STATES

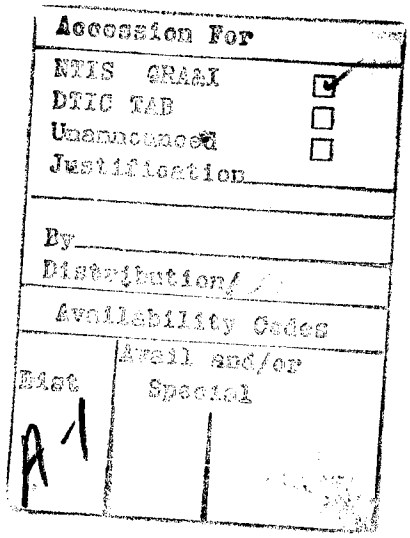
Name of degree candidate: John Gregory Worley

Degree and Year: Master of Criminal Justice, 1994

Thesis directed by: Doctor Doris MacKenzie
Department of Criminology and Criminal Justice

This study examines the effect of urine testing on performance during community supervision of offenders who have completed a shock incarceration program and two comparison groups. The two separate models examined the effect of drug testing on performance during community supervision and the effect of a positive drug test on performance during community supervision. Data studied came from Florida, Georgia, and South Carolina. Urine testing had a limited deterrent effect, as measured by re-arrest, in Florida. A large percentage of drug users may have been able to avoid detection. Positive drug tests failed to be significant predictors of later arrest, revocation, or absconding while on parole. The lack of significant findings may be do to poorly administered testing programs, as opposed to, the ineffectiveness of any testing program.

TABLE OF CONTENTS



LIST OF TABLES

CHAPTER I: INTRODUCTION

A large percentage of the individuals processed by the American criminal justice system use illegal drugs. The National Institute of Justice conducted drug testing of arrestees in twenty-four cities. The percent of male arrestees who tested positive for use of any drug ranged from thirty-six percent in Omaha to seventy-five percent in San Diego (NIJ, 1991,p 3). The fact that many criminals are drug abusers has led to an increased interest in the use of urine testing as a condition of probation and parole.

In this research project, I will look at the effects of urine testing on three groups of offenders in three different states. Does testing have a deterrent effect on offenders? Is testing more or less effective for individuals who have completed a shock incarceration program? Is a positive drug test in the first 90 days after release an accurate predictor of future criminal problems? These are a few of the important questions addressed in this research.

URINE TESTING

The development of reliable and inexpensive immunoassay technology in the early 1970's made wide scale drug screening possible. Extensive random testing in the United

States military has been effective in deterring and greatly reducing the prevalence of drug use. The success of the military testing program illustrates several potential problems, as well as, giving hope for effective drug testing in the criminal justice system. The military has proven that a highly accurate, large-scale drug testing program can be implemented and can greatly reduce the prevalence of drug use (Wish, 1990, p 325). However, the criminal justice system must deal with a different class of individuals than the military. Many offenders have found their way into the justice system because of extensive drug use. Individuals who test positive for drug use are expelled from the military. Offenders who test positive become more involved with the criminal justice system.

While I will not give a clinical analysis of urine testing, several facts are important to understand the limitations of this testing method. Opiates and cocaine are water soluble and are excreted from the body in forty-eight to seventy-two hours. Marijuana is fat soluble and users can test positive for several weeks after use (Mieczkowski, 1993, p 1). Thus, if an individual is not a daily user of heroin or cocaine it is quite possible that the test will not identify use of these drugs consistently. If the offender has prior knowledge of when testing will be conducted, he may alter his usage

to avoid detection.

Additionally, there must be a capacity to impose sanctions on those who test positive or fail to show-up for a test. Strict and explicit administrative procedures must be set up or different officials will respond differently to a positive test and undermine the system (NIJ, 1993, p 52; Morris, 1990, p 198). The most effective test procedures are useless if the information they provide about drug usage is not used appropriately. Research confirms that the threat of sanctions can be a strong incentive to keep offenders in drug treatment and decrease their drug use and crime (Falco, 1992, p 143).

PURPOSES OF URINE TESTING

Urine testing provides one objective measure of an offender's compliance with the goals of reducing drug use, and detecting drug use and relapse. Additionally, testing has great public relations value by demonstrating that officials can control offenders in the community (Anglin, 1990, p 404). Urine testing can help authorities identify drug users in the criminal population so they can be referred to treatment or given special attention. Drug users are generally classified as high-risk offenders. Federal records show that in 1992, sixty-one percent of offenders with a known drug history violated parole compared to only twenty-nine percent for parolees with no known drug history (Husband, 1993, p 31).

Self-report has proven to be an ineffective method to identify recent drug use. In his 1986 study, Wish found that while only twenty-five percent of his sample admitted to drug use, sixty-eight percent had a positive urine test (p 11). Wish's 1993 study found similar results, eighteen percent of his sample admitted recent cocaine use and sixteen percent admitted recent crack use, however, sixty-three percent tested positive for cocaine (p 6). Additionally, he found that self-reports of drug use were not significant predictors of rearrest, while a positive urine test proved to be associated with rearrest (p 8). This finding is supported by a 1990 National Institute of Justice study (Dembo, 1990, p 2).

Identification of drug problems and prediction of rearrest are not the only possible uses of urine testing data. It has been theorized that urine testing may have a deterrent effect on drug use by offenders. Two recent studies conducted in Birmingham and Phoenix indicate that persons who recieved drug treatment performed no better on probation than persons who received only urinalysis monitoring (NIJ, 1993, p 104). This would imply that an effectively run urinalysis program has some deterrent effect on drug use. Studies generally agree that treatment can reduce drug use on average among offender populations (Wilson, 1990, p 536; Simpson, 1986, p 118; Vito, 1989, p 34; Deleon, 1985, p 825; Anglin, 1990, p 394; Gendeau,

1990, p 182; Anglin, 1988, p 543; Wallace, 1990, p 23; Falco, 1992, p 150). If urinalysis alone could produce similar reductions in drug use and the subsequent crime associated with it that treatment does, we would have a powerful tool to cause a ten to twenty percent reduction in recidivism among drug users (The reduction figure comes from Gendreau's 1990 review of meta-analysis of offender treatment, p 182).

However, other researchers doubt that urine testing alone has any deterrent value. Turner (1994) found that urine testing in conjunction with intensive supervision did not reduce recidivism and that it increased the percent of offenders who received technical violations (p 231). Despite the negative findings in this five site study, many supervisory staff members felt that urine testing was a valuable tool in their work. The question of whether urine testing is an effective deterent will be one of the key issues examined in this research project.

APPROPRIATE REACTION TO POSITIVE URINE TESTS

One response to a dirty drug test is the "you use, you lose" philosophy. Positive tests are responded to with swift and severe sanctions. An alternate view holds that drug rehabilitation is a long process and relapse is part of the recovery process. Offenders should be counseled and not necessarily sanctioned. The highest risk of relapse occurs during the first ninety days after

release. Research has shown that approximately two-thirds of those who relapse do so in this time period (Tims, 1986, p 164; Leukefield, 1990, p 626). Additionally, between fifty-six percent and seventy-five percent (from three different samples) of individuals who quit daily drug use relapsed within one year (Tims, 1986, p 55; Simpson, 1986, p 117). It is clear that many offenders will resume or continue drug use after being placed on parole or probation. A treatment approach to this problem might treat positive tests as inevitable and use them for information or counseling purposes only.

However, approaches that ignore, or fail to address positive tests seriously, have proven to be less effective in terms of recidivism (Anglin, 1988, p 534). Strict enforcement with urine testing leads to less drug use during follow-up than more liberal approaches (Wilson, 1990, p 538). For a testing program to work it must impose consistent sanctions or offenders will ignore it. This does not mean the program cannot be flexible to accomodate the realities of different offenders, but some action is necessary whether it is sending the offender to treatment, imposing a curfew, or increasing parole officer contacts (Anglin, 1988, p 535; Morris, 1990, p 198).

One factor that may be important in dealing with drug users is that they may value immediate rewards over long term success. Krashegor (1979) found that both male and

female addicts chose immediate reward significantly more than two control groups (p 21). This fact would lead one to believe that on-site urine testing with immediate feedback would be more effective than sending specimens to an outside lab. However, Goldstein (1977) found that on-site testing had little or no therapeutic value (p 717). One reason for this may have been that all subjects, even clean ones, were delayed waiting for test results. One final issue associated with drug testing is that any program will identify a large number of previously unknown users (Wish, 1990, p 366). This could overload an existing program or make it appear that drug use has gotten worse when the efficiency of detection has increased.

SHOCK INCARCERATION

Shock incarceration, or "boot camp" prisons, are one of the latest responses of the criminal justice system to young first time offenders (some states include older, repeat offenders in their programs but this is not the norm). A large percentage of the offenders admitted to shock programs are probably involved in drug usage. Offenders from shock programs in Florida, Georgia, and South Carolina self-reported drug use prior to arrest in twenty-two to thirty-seven percent of the cases studied (MacKenzie, 1993, Tables 6, 10, 27). The research cited previously on the difference between self-report and urine

testing would lead us to conclude that these numbers are very conservative estimates of actual drug usage. Thus, one would expect a large number of drug users in the population of those admitted to shock programs.

Offenders in shock incarceration live in an environment full of harsh discipline and much physical activity. It would seem that individuals coming out of such a restrictive environment would not find urine testing as severe a sanction as an offender coming out of jail or who is on probation. When keeping track of drug using offenders, officials must balance the amount of supervision imposed. Too little and proper control cannot be maintained, too much and the offender will abscond (Anglin, 1988, p 534). Thus, a shock parolee may not find urine testing as severe a restriction as a normal parolee. The shock parolee may be less likely to abscond than a similar non-shock parolee.

RESEARCH QUESTIONS

THE EFFECTS OF DRUG TESTING

Do offenders who are subjected to urine testing perform better on parole/probation than offenders who are not tested? As discussed earlier, urine testing alone may act as a deterrent to drug use. If urine testing reduces drug use, which is associated with an individual's level of criminal activity, I would expect arrests to decrease in the sample receiving drug testing.

Hypothesis #1: Offenders who are urine tested will be arrested less often then offenders who are not tested.

Urine testing is often associated with intensive supervision programs. Thus, the increased contact between offenders and parole officers may be the cause of a decrease in arrests.

A second measure of performance that I will look at is whether or not the offender absconds. More severe supervision may lead to higher rates of absconding. The perception of severity is relative to one's past experiences. Those offenders who were in a shock program may not view urine testing as negatively as other offenders because they have just come from a very disciplined and oppressive environment.

Hypothesis #2: Offenders who are urine tested will abscond more often than offenders who are not tested.

Hypothesis #2A: Offenders who complete a shock incarceration program and are urine tested will be less likely to abscond than non-shock offenders who are urine tested.

The third and final measure of performance on community supervision that will be looked at is revocation of parole. Urine testing subjects offenders to an additional source of potential sanctions while on parole. This may lead to more technical violations of parole, as cited previously in the literature. However, if hypothesis #1 is correct,

the offenders who are urine tested should be revoked less often for new crimes. These two factors may cancel each other out.

Hypothesis #3: Offenders who are urine tested will have their parole revoked at the same rate as offenders who are not tested.

THE EFFECTS OF A POSITIVE DRUG TEST

What is the meaning of a positive drug test? A positive urine test may be a good predictor of later problems while on parole. An alternate view says that recovery from drug addiction is a lengthy processes and officials need to be tolerant of relapse, which is part of the recovery process (Austin, 1977, p 75).

Hypothesis #4: Offenders who have a positive urine test while on parole will be more likely to be arrested, abscond, or have their parole revoked at a later time than those who test negatively for drug use.

CHAPTER II: METHOD

The data analyzed in this research project came from information collected in Dr. Doris L. Mackenzie's Multi-State Study of Shock Incarceration. After completion of the shock program offenders were released for supervision in the community. While on probation, officials filled out quarterly "Offender Adjustment to Community Supervision" questionnaires on both shock offenders and a control group of non-shock offenders. The data covers a one year post release time period. The specific questions which form the basis for my research asked if the offender was drug tested and if so how many positive tests were obtained.

In my first set of models, the independent variables of drug testing and positive drug tests are taken from the first three months after release. This provides a large amount of data to work with, ensures correct temporal ordering of the variables, and aids in drawing conclusions about the research hypotheses. The dependent variables of arrest, revocation of parole, and absconding are obtained by identifying offenders who committed these acts in months one through twelve. I initially considered leaving out data from the first three months to avoid the possibility that the dependent variable preceded the independent variable. I determined that individuals who had a positive test would have been tested before violating

parole. If these violations occurred first they would not have been tested. This possible problem does not exist for the drug test variable since the individual knew he was subject to testing upon release and thus subject to its potential deterrent effect.

A second set of analyses will be run which uses positive drug tests and drug testing from all four time periods. Since positive drug tests are a relatively rare occurrence this will increase the number of cases analyzed. These results will be compared to the results of the analyses that used data from the first three months. There is a possibility that the temporal ordering of the independent and dependent variables may be violated in some of the cases studied in this analysis. For example, some offenders who were arrested remained on parole and may have been subject to testing after their arrest. This does not seem to be a major problem with the data and it does not exist for the first set of analysis.

Another potential problem with the data is that those individual's who are drug tested may differ in some demographic characteristic from those who are not tested. In my analysis, I will examine if the tested and untested groups differ significantly from each other in age, race, sample composition (shock, shock-dropouts, parolees), type of crime committed, sentence length, face-to-face contacts, and prior arrests. If the two groups are similar

in these variables, the chance that a variable besides drug testing is responsible for differences between the groups is decreased. Additionally, I will examine the three sample groups to see if they vary in percent of offenders drug tested; percent of offenders with a positive test; or percent of offenders arrested, revoked, or absconded. These data analysis will strengthen the results of this research.

In this project, logistic regression was used to determine if drug testing and positive drug tests were significant predictors of arrest, absconding, and revocation of parole. Additional control variables found in the analysis include age, number of contacts with authorities, and length of sentence. In Florida offenders were classified into three groups; those who had completed a shock incarceration program, those who were admitted to shock programs and dropped out, and those who were sentenced to prison. In Georgia and South Carolina the groups were slightly different; offenders who completed a shock program, offenders sentenced to prison, and offenders sentenced to probation.

METHOD

Extensive research has been done using the data Dr. MacKenzie collected for the Multi-State Study. However, no one has analyzed the data which is the focus of this research. While the primary focus of this study will

be on how urinalysis effects post release outcomes of offenders, it will, also, examine if shock graduates and dropouts are effected differently than a similar population of parolees and probationers.

SAMPLES

Data for this study was only avaliable in three of the seven states from the Multi-State Study; Florida, Georgia, and South Carolina. The research focuses on information obtained during community supervison of offenders. The sample can be divided into four groups: those offenders who completed the shock program, offenders who dropped out of the shock program, offenders who were paroled from prison, and offenders sentenced to probation. Although the data come from the shock incarceration study, the information from this study is applicable to most offenders in community supervision.

It is important to note that the samples studied were not randomly assigned to shock, prison, or probation. Offenders were selected for shock programs by judges or state departments of correction. The offenders on parole and probation were selected to be as similar as possible to the shock offenders. These offenders were formally eligible for shock incarceration but were not sentenced to shock. Some reasons these offenders were not sentenced to shock include; judge disapproval of placement in shock, medical or psychological unfitness, lack of screening

and recommendation by department of corrections, or lack of bed space in the shock program at the time of sentencing (MacKenzie, 1992, p 35).

In Florida, a total of 289 offenders were observed. There were three groups of offenders studied; shock graduates (112), shock dropouts (68), and prison parolees (109). In Georgia, the 300 offender sample consists of shock graduates (101), shock dropouts (3), prison parolees (100), and probationers (95). Because there are only three subjects who are shock dropouts, dropouts were combined with the shock offenders in the Georgia data analysis. South Carolina data contains information on 326 subjects. These offenders fall into three groups; shock graduates (169), prison parolees (64), and probationers (93). Information on all variables is not available for all subjects. The quality and amount of data varies between the three states. Florida has the least missing data and the largest percentage of offenders drug tested. Georgia has a large amount of missing data and no information on the results of drug testing in the first six months after release. The specifics of each sample will be detailed in the results section of this study.

PROCEDURE

Community supervision officers were given forms to fill out concerning the conduct of offenders. Data were

collected at three month intervals for one year. Important questions used in the study include: was the offender arrested, did the offender abscond, was the offender's parole revoked, was the offender tested for drug use, and how many positive tests? Data on all questions is not available for all subjects. Urine testing may be associated with more intensive community supervision of offenders. I will control for the number of face-to-face contacts between offenders and criminal justice personnel to see if testing or the number of contacts is the cause of this theorized relationship (this information is only available in Florida).

CHAPTER III: RESULTS

The first segment of my analysis will examine the demographics of the sample. Is there some outside factor (for example age, race, prior arrests, etc.) which may cause different rates of arrest, absconding, or revocation between the tested and untested offenders? Implications of significant differences in the groups will be addressed.

Next, I will compare the percentage of positive drug tests in Florida, Georgia, and South Carolina to the percentage of positive tests obtained through the Drug Use Forecasting (DUF) program. The DUF data are collected at booking facilities throughout the United States. Approximately 225 subjects were tested at each of twenty-four different sites. The National Institute of Justice conducts this testing quarterly. The Florida data will be compared to DUF data from Ft. Lauderdale and Miami. No DUF forecasting was done in South Carolina. The data from this state will be compared to DUF data from Atlanta, the closest city tested. Atlanta will, also, be used for comparison with the Georgia data. Is DUF data (arrestees) similar to the Multi-State data (parolees/probationers)? If there are differences, what are some possible reasons for them?

Next, the results of my logistic regression models will be examined. With three states being looked at we can be more certain of positive findings if they occur

in more than one state. If the shock offenders perform differently in different states, I will examine the unique features of the individual shock programs and theorize about what could be responsible for the different results. Finally, I will discuss the implications of this research and give suggestions for future research.

SAMPLE COMPARISONS

Do the individuals who are drug tested differ in some demographic feature from those who are not tested? In Florida, data was available on age, race, sample, crime committed, sentence length, and face-to-face contacts with parole officers. Table 1 summarizes this data. The average age and average sentence length of the two groups are almost identical (Age: tested-19.58 years, not tested-19.33 years; Sentence length: tested-42.0 months, not tested-41.6 months). Those tested did not differ from those who were not tested in terms of race. The only significant difference found between those tested and not-tested for drug use is for face-to-face contacts. The mean for those who were tested is 19.2 contacts in a three month period. The mean for those who did not receive drug testing is only 7.85 contacts for the same period. It appears that drug testing is associated with more intensive supervision. It is possible that any effects of drug testing may simply be because they are associated with more parole officer contact. Contacts

will be controlled for in the Florida analysis.

In Georgia, data is available for age, race, sample, crime committed, prior arrests, and sentence length. Table 2 summarizes this data. The average age and race of the drug tested group does not significantly differ from the non-tested group. The only significant difference found between those tested and not tested for drug use is in sentence length. Those tested had an average sentence length of 47.1 months compared to an average sentence of 36.8 months for subjects who were not tested. This may indicate that more serious offenders were drug tested. Sentence length will be used as a control variable in all three states.

In South Carolina, data is available for age, race, sample, crime committed, prior arrests, prior convictions, and sentence length. Table 3 summarizes the data. The subjects who are drug tested are significantly younger than those who are not tested (tested-20.34 years, not tested-21.36 years). Younger offenders are expected to commit more crimes than older offenders. Drug testing is expected to reduce the number of crimes offenders commit. This could potentially reduce the difference between the tested and non-tested groups, making it harder to detect significant differences. However, the age difference is small (one year) and should not cause a very large change in crime rates. I will control for

age in my analysis to separate its effect from that of urine testing. Shock offenders make up 68.8% of the drug tested offenders, but only 30.0% of the offenders who were not drug tested. If shock offenders perform differently than other parolees, this could lead us to attribute the effects of the shock program to urine testing. Studies of the South Carolina shock program showed that shock offenders performed similarly to other parolees during community supervision (MacKenzie, 1993, p 109). Those individuals who were drug tested had significantly longer sentences when compared to subjects who received no testing (tested-46.13 months, non-tested-28.45 months).

The three groups of offenders studied were tested at different rates in two of the three states studied. In Florida, there were no differences in the rates of testing of the shock graduates, the shock dropouts, and the prison parolees. In Georgia, the prison parolees were more likely to be subjected to drug testing than the shock parolees or the probationers. Shock offenders were most likely to be drug tested in South Carolina and hardly any prison parolees were subjected to testing. None were tested in the first three months after release. This indicates that the urine testing programs for the three groups of offenders studied in Georgia and South Carolina may be different. Tables 4, 5, and 6 summarize

differences between the various groups of offenders studied.

The three states studied had different rates of drug testing. These results are summarized in Table 7. In Florida, 36.8% of the offenders were drug tested in months one through three. In the year after release, 55.4% of offenders were tested at least once. In Georgia, 22.0% of offenders were tested in the first three months after release. This number rose to 38.6% of offenders when the time period was expanded to one year after release. The number drops even further in South Carolina where only 14.0% of the offenders were subject to testing in the first three months after release. This number jumps to 45.5% when looking at one year after release. The data indicates that a majority of offenders were not subject to any type of drug testing.

A small percentage of offenders were subject to drug testing and only a small percentage of these tested positive for drug use. A positive drug test is thus a relatively rare event in this data. Information on test results was dichotomized into whether or not a positive test occurred. A vast majority of offenders had only a single positive test during the three month observation periods. It is not known how many times subjects were tested. It may be misleading to give less weight to an individual who is tested once and is positive, than to

an individual who is tested six times and has two positive tests. Additionally, it is not known which drugs were tested for in each of the states. If one state tests for a larger number of drugs, we can expect different rates of positive tests even if use rates are similar. Table 7 has specific information on the number of positive tests and number of offenders tested.

To see how the number of positive tests in this data compares to other research, they have been compared to results of the 1991 Drug Use Forecast (DUF) conducted by the National Institute of Justice. A summary of this comparison can be found in Table 8.

The data from DUF identifies a larger percentage of drug users than the data analyzed in this research. The percentage of positive tests is between two and five times higher in the DUF study. There are several possibilities for this difference. The DUF research looks at arrestees, while the data for this study looks at parolees and probationers. Some aspect of the offenders contact with the criminal justice system may have reduced their drug use. This seems unlikely based on the size of the difference and current state of the American justice system. The specimens collected for the DUF were analyzed for ten drugs. If the testing done in the three states was less extensive, we would expect a lower rate of positive tests. The individuals on parole were aware

that they were being tested. Anytime an offender is aware that he is being tested there is a possibility of deception (Wish, 1990, p 367). If the drug tests were not unannounced, subjects could have altered their use habits to avoid detection. Cocaine and heroin are only detectable for two to three days after use by urine testing. It seems reasonable to conclude that a significant number of offenders are able to conceal their drug use from authorities while on parole even when subject to drug testing.

DATA ANALYSIS

The dependent variables in this research project can have only two values (for example, arrest- yes-1, no-0). This fact causes the assumptions necessary for hypothesis testing in regression to be violated. For this reason, I used the technique of logistic regression to answer the research questions addressed by this project. In logistic regression you directly estimate the probability of an event occurring. In this research the events to be estimated (the dependent variables) will be arrest, revocation of parole, and absconding. The independent variables will be the presence or absence of drug testing (drug test), which sample group the offender is in (three groups are represented by two dummy variables), and an interaction term to see if the shock program combined with drug testing has an added effect. The model can

be written as follows:

$$\text{Prob(arrest)} = 1 / 1 + e^{-Z}$$

$$Z = \text{constant} + B_1(\text{drug test}) + B_2(\text{parole}) + B_3(\text{dropout}) + B_4(\text{interaction 1}) + B_5(\text{age}) + B_6(\text{sentence})$$

Drug test- is the subject drug tested (no=0, yes=1)

Parole, dropout- dummy variables for which sample group the subject is in (shock, shock dropout, parole, probation) there are different groups in different states

Interaction 1-(Shock)(drug test)

Age- age at parole in days

Sentence- length of sentence in months

The second step in analysis will substitute the results of a drug test (negative-0, positive-1) for whether or not the offender was subject to urine testing. These analysis look at two different samples. The first analysis uses cases where the parole officer has specified whether or not the subject was drug tested. The second analysis uses those cases where the offender was urine tested (a much smaller number of cases than the first analysis). Data on the results of drug testing are available in Florida and South Carolina for all four quarters in the year after release. Georgia only has results for the third and fourth quarters after release. Additional control variables that will be added to the model include number of face-to-face contacts (this information is only

available for Florida), age at parole, and length of sentence.

When running the various logistic regression models the missing data lead to a problem in Georgia. The number of missing observations for age and drug testing caused me to loose 48% of the observations. When the model was re-run without age only 24% of the data was lost. The results of the two analyses were similar. Since age seems to be significant in a number of the models, the model that includes age will be presented to avoid attributing the effects of age to other variables.

ARREST

This outcome had the most significant results of the three examined in this research. Two models were run in each state to see the effect of drug testing on arrest. The first model looked at drug testing in the first three months after release. The second looked at if the offender had been tested at anytime during the one year post release period. Table 9 contains a summary of these results. All results which are discussed were significant at the .05 level. Results that failed to reach this level of significance but were significant at the .10 level will be noted as being marginally significant.

Offenders drug tested in the first three months after release were less likely to be rearrested in Florida. These results were marginally significant when the time

period was expanded to include drug testing anytime during the one year supervision period. In both models age and sentence length were significant. Older offenders were less likely to be arrested than younger ones. Offenders with longer sentences were more likely to be arrested compared to those with shorter sentences. Additionally, both models showed that parolees performed significantly different from shock offenders. The parolees were more likely to be arrested than the shock offenders. The shock dropouts did not differ from the shock offenders.

In Georgia, there were no significant differences between those who were drug tested and those who were not. This is true for drug testing in both time periods analyzed. Age was the only variable that reached significant levels in either model. Older offenders were less likely to be arrested than younger offenders in both models.

In South Carolina, drug testing was not a significant predictor of arrest in either of the two time periods analyzed. In the model examining drug testing anytime in the one year period of community supervision, age and the interaction of shock and drug testing were marginally significant. Older offenders were less likely to be arrested than younger ones. Shock offenders who were drug tested were less likely to be arrested than non-shock offenders and non-tested shock offenders. Table 9A shows

that a smaller percentage of offenders were arrested who were drug tested shock graduates even without the control variables from the logistic regression model.

Two analysis were run to see if a positive drug test was a good predictor of future arrest. The first analysis used a positive drug test in the first three months after release and the second used a positive drug test anytime in the one year observation period. A summary of these results can be found in Table 10. A positive drug test was not a significant predictor of arrest in any of the models studied for all three states. Older offenders were more likely to be arrested than younger ones in Florida (this was true for both time periods studied). The only other notable finding was in South Carolina. Offenders with longer sentences were marginally more likely to be arrested than those with shorter ones.

Hypothesis #1 (page 9) receives limited support. In Florida, offenders who are drug tested are less likely to be arrested even after controlling for level of supervision, age, and sentence length. However, these results do not receive support from Georgia and South Carolina.

ABSCONDING

Less offenders absconded than were rearrested. Results of the models examining drug testing as a predictor of absconding can be found in Table 11. None of the variables

examined in Florida reached significant levels in either of the two time periods studied. These results were similar to South Carolina's findings. Sentence length was marginally significant when looking at drug testing in the first three months. Offenders who were given a longer sentence were more likely to abscond.

In Georgia, drug testing was marginally significant for both the offenders tested in the first quarter after release and those tested anytime during supervision. In both cases offenders who were drug tested were less likely to abscond than non-tested offenders. Additionally, in the analysis of drug testing in the first quarter, age and the interaction of shock and drug testing were significant. Older offenders were marginally less likely to be arrested than younger ones. Shock offenders who were drug tested were more likely to abscond than non-tested shock offenders, parolees, and probationers. Table 11A shows that a larger percentage of drug tested shock offenders absconded even without the control variables of the logistic regression model.

Positive drug tests were not a significant predictor of absconding in Florida. In both of the time periods analyzed sentence length was marginally significant. Additionally, in both models, shock offenders were more likely to abscond when compared to offenders paroled from prison. The shock dropouts did not differ from those

who had completed the shock program.

None of the variables in the Georgia model, which used drug test results to predict absconding, were significant. In South Carolina, a positive drug test was not a significant predictor of absconding. In the analysis of a positive drug test during the entire year after release, shock offenders were marginally less likely to abscond than prison parolees. Probationers were not significantly different from the shock offenders. Table 12 summarizes the models looking at drug test results and absconding.

Hypothesis #2 (page 9) was not supported by the analysis. Urine tested offenders do not appear to abscond at different rates than non-tested offenders in Florida and South Carolina. It was predicted that drug tested offenders would be more likely to abscond. In Georgia, drug tested offenders were less likely to abscond. Hypothesis #2A (page 9) was not supported. Shock offenders do not seem to react differently to urine testing than other offenders in terms of absconding in Florida and South Carolina. Furthermore, shock offenders who were drug tested were more likely to abscond in Georgia, not less likely as predicted.

REVOKE

A summary of the findings looking at drug testing and revocation can be found in Table 13. Drug testing

fails to reach significance in any of the three states studied. This is true for both time periods studied. In Florida, age is significant in both time periods examined (the results are only marginally significant for drug testing in the first three months). Older offenders are less likely to have their parole revoked in these models. In both models, shock offenders are less likely to have their parole revoked when compared to prison parolees. The shock dropouts do not differ from those who completed the shock program.

In the Georgia analyses none of the variables in the model reach significance. In South Carolina, the only variable that is significant is sentence length. Offenders who received longer sentences are more likely to have their parole revoked.

The final models examined the effect of the results of drug testing on revocation of parole. These results are summarized in Table 14. In the two states which had data to conduct an analysis based on test results in the first quarter after release (Florida and South Carolina), none of the variables in the models were significant.

In the analysis of positive drug tests from the entire twelve month supervision period, the results of drug testing were not a significant predictor of revocation in Florida. In this model shock offenders were less likely to have their parole revoked than prison parolees. The

shock dropouts did not differ from the shock graduates. Additionally, shock offenders who tested positive for drug use were more likely to have their parole revoked compared to all prison parolees and shock offenders who tested negatively for drug use. Table 14A shows that without the control variables of the regression model, parolees who tested negatively for drug use had the highest percentage of offenders revoked.

Georgia produced the only significant findings concerning the results of drug testing for this entire study. Offenders who tested positive for drug use were more likely to have their parole revoked than those who tested negatively for drug use. No other variables were significant in the Georgia analysis.

Drug test results were not significant in South Carolina. However, several other variables reached significant levels. Individuals who had longer sentences were more likely to have their parole revoked. Shock offenders were less likely to have their parole revoked compared to offenders on probation. Furthermore, shock offenders were marginally less likely to have their parole revoked when compared to prison parolees.

Hypothesis #3 (page 10) was supported by the research. Offenders who were urine tested do not seem to have their parole revoked at a greater or lesser rate than non-tested offenders. Hypothesis #4 (page 10) received little

support. The only findings that reached significance were those looking at revocation in Georgia. One would expect drug using offenders to be involved in more problems while on parole. However, when looking at the comparison of DUF data and rates of positive testing in this data, it appears that a large number of drug users may have been able to avoid detection. The way the drug testing programs were administered in these three states may have been relatively ineffective at identifying and dealing with drug users.

CHAPTER IV: DISCUSSION

A large number of criminal offenders reside in the community under the supervision of parole or probation officers. Many of these offenders continue to use drugs and commit crimes. This increases the risk that law abiding citizens will be victimized. Any tool which can be used to increase the efficiency of supervision will benefit society greatly. Urine testing has the potential to reduce an offender's drug use and the subsequent crimes associated with a drug involved lifestyle. However, this study did not reveal a dramatic improvement in performance of drug tested offenders.

Drug testing in Florida decreased arrest during community supervision after controlling for the offender's age, the length of the offender's sentence, the number of offender contacts with supervisory personnel, and whether the offender was a shock graduate, a shock dropout, or a prison parolee. In Georgia, drug testing made offenders marginally less likely to abscond than non-tested offenders. This analysis controlled for the offender's age, the length of the offender's sentence, and whether the offender was a shock graduate, a prison parolee, or a probationer. Drug testing had no effect on outcomes during community supervision in any of the other models studied.

One of the most noteworthy weaknesses of the data

studied was the lack of information on the procedures officials used to administer the urine testing programs in the three states examined. The earlier comparison between this data and that collected by the National Institute of Justice in its Drug Use Forecasting (DUF) program may suggest that a substantial number of tested offenders in this study were able to conceal their drug use. A second possibility is that DUF may have tested for more drugs than the testing used in these states. DUF tests for ten different drugs including marijuana. The supervisory personnel may have only tested for harder drugs like cocaine and heroin. Marijuana can be detected in an individual's system for several weeks after use. Thus, a program which tests offenders over time may avoid testing for it to avoid multiple positive tests from the same drug use episode. If urine testing as administered did not consistently identify drug use, any deterrent effect it had would be reduced. Additionally, if positive tests did not lead to some type of official sanction, there would be no incentive for offenders to reduce drug use. Another problem with the data used in this study is that the nature of response to positive drug tests is not known. Negative findings concerning the deterrent value of urine testing may not be because testing has no effect but because a poorly run testing program has no effect.

It is not known what criteria were used to select offenders for drug testing. In Georgia and South Carolina, tested offenders had longer sentences than the non-tested offenders. In Florida, drug testing was associated with more intensive supervision as measured by contacts. The criminal justice system has only a limited amount of resources and it would make sense to allocate more resources to keep track of offenders believed to be a higher risk for future problems. Thus, offenders selected for drug testing may have been those viewed as more likely to become involved in future criminal activity. If this is the case, the fact that urine tested offenders did not perform worse, and in several cases performed slightly better than the non-tested offenders, may indicate that the testing was able to make high risk offenders perform at levels similar to lower risk offenders. When researchers are unable to randomly assign subjects to treatment, as is often the case in a criminal justice setting, it is important to know what criteria were used in selection.

As discussed previously, the subjects in this study were not randomly chosen or randomly assigned to treatment groups. Parolees and probationers were chosen to be as similar as possible to the shock offenders in areas like age, race, and sentence length. The offenders in these groups were eligible for shock incarceration but not

selected. Despite these precautions, there may be some underlying differences between the groups that are not readily apparent. In Florida, the prison parolees performed differently from the shock graduates in two-thirds of the models studied. However, the shock dropouts, who were sent to prison after dropping out, performed similarly to shock graduates. The shock dropouts had to be selected for shock programs by state officials in the same way as shock graduates. Different performance in terms of arrest, revocation and absconding may be the result of some unidentified difference between the groups as a result of selection, as opposed to the shock experience itself.

This research agreed with previous findings that older offenders are less likely to be arrested compared to younger ones. However, age did not appear to be a significant predictor of absconding during community supervision. Additionally, age was not a significant predictor of revocation, except in Florida were older offenders were less likely to have their parole revoked. It is surprising that the number of face-to-face contacts offenders had with authorities was not associated with differential outcomes. However, if the most serious criminals were given more attention (as discussed above) the fact that these offenders performed the same as other offenders may indicate some success for increased contacts.

In South Carolina, a larger percentage of shock offenders were subject to urine testing when compared to prison parolees and offenders on probation. Additionally, the number of offenders who were urine tested increased during the one year supervision period (32 in the first quarter compared to 93 in the fourth quarter). In this state, drug testing may have been a punitive measure. Few offenders were initially subject to drug testing, but as time passed more were tested. I speculate that drug tests were given to offenders who had problems on parole or whom supervisors suspected of using drugs. If more serious offenders were selected for drug testing in South Carolina, it may be harder to draw conclusions about the connection between drug testing and performance.

In Florida, those offenders who were urine tested received approximately two and one half times as many contacts with parole officers as non-tested offenders. Contacts served as a control variable in all the Florida analysis. It was theorized that contacts and not urine testing could have led to differential behavior during community supervision. The number of contacts never reached significant levels in any of the models studied. However, the sign was the same in all but one of the models. In each case an increased number of contacts lead to a decline in the occurrence of problems during community supervision as measured by arrest, absconding,

and parole revocation. Thus, contacts may have a small effect on these outcomes, but the sample studied here was not large enough for these effects to reach significant levels.

The Florida program appears to be different from the one in South Carolina. The largest number of offenders were tested in the first quarter and the number decreases over time. It seems to me that most of the drug tested offenders were assigned to drug testing upon release as a condition of a more intensive supervision program. This is supported by the fact that drug tested offenders on average had more face-to-face contacts with supervisors than non-tested offenders. In Florida, the interaction of a positive drug test and being a shock graduate was a significant predictor of revocation. When looking at the percentage of offenders who had their parole revoked, a positive drug test seems to be more likely to cause revocation for the shock group. In the parole group, offenders with a positive test were less likely to be revoked. This supports the idea that the shock parole program differed from the prison parole program. At least some of the offenders may have been in a program that treated positive tests seriously. This factor may have contributed to the effectiveness of the Florida program as measured by rearrest. A second possibility is that revocation was more likely to result in a return to prison

for one or more groups of offenders, thus decreasing the opportunity for the offender to be subject to a drug test. A small number of positive drug tests weakens these suppositions.

In two of the states the interaction of shock and drug testing proved to be significant. In South Carolina, drug tested shock offenders were less likely to be rearrested. The shock program in South Carolina has an increased emphasis on education and release preparation (MacKenzie, 1992, p. 20). Individuals who were tested appear to be more serious offenders (based on sentence length). Maybe these offenders benefited more from the training or responded better to external control than did others. Also, offenders can volunteer out of shock in South Carolina. The small number of drug tested offenders in the South Carolina makes analysis more difficult and significant findings are less likely to be identified.

In Georgia, drug tested shock offenders were more likely to abscond. Some factors which may have contributed to this include: the Georgia shock program devoted the least time to rehabilitation, had a heavy emphasis on work, and did not allow for voluntary exit, only 2.8% of entrants failed to complete the course (MacKenzie, 1992, p.10). The harsh environment and lack of skills training may have caused shock offenders who were tested

to resist the conditions of parole. Furthermore, the low attrition rate indicates that more serious offenders who would be expected to be greater risks on parole were not screened out of the shock group. The harsh nature of the program may have made some offenders more afraid of getting caught using drugs and contributed to them absconding.

The primary purpose of the data gathered in the Multi-State Study was to evaluate the effectiveness of boot camp prisons. The data used in this analysis of drug testing was gathered with that purpose in mind, not evaluating urine testing. From my study, I think that several pieces of information could have made the data more useful. First, what were the criterion used for selecting offenders for drug testing? Second, what type of sanctions were given for a positive test? Additionally, were offenders aware of the date of testing in advance or were tests conducted on a random, no-notice basis? This would aid not only my research but any study looking at the effectiveness of boot camps. In South Carolina, shock offenders were more likely to be urine tested. If this indicates that shock offenders were treated differently while on parole than other offenders, a straight comparison of the performance of these two groups could be misleading.

Overall, urine testing did not seem to have an

important deterrent value. Testing was most effective in Florida at reducing arrest. However, I believe that urine testing in and of itself is not as important as the way the program is administered. A half-hearted effort wastes resources that could be more wisely spent else where. Positive drug tests were almost always associated with poorer performance on parole. These findings only reached significant levels in one model (revocation in Georgia). One possible reason for this is that a large number of drug users were able to avoid detection. Thus, a poorly run testing program may be to blame. Additionally, the low number of offenders tested led to small sample sizes in these analysis, making it harder to detect differences in performance.

Future study of urine testing should focus on what types of testing programs make the most effective use of the limited resources available to the criminal justice system. New procedures, like the use of hair for drug testing, promise to decrease problems of collecting and altering samples. New technologies and the information they make available have the potential to improve community supervision but only if they are used effectively.

APPENDIX A

TABLE 1: A COMPARISON OF DRUG TESTED AND NON-DRUG TESTED OFFENDERS IN FLORIDA

	URINE TESTING: TESTED	URINE TESTING: NOT TESTED	
FLORIDA			
AGE M (SD) (at parole) (in years)	19.58 (1.94) N=99	19.33 (1.85) N=170	t=-1.04 p=0.301
RACE %(N)			X^2=4.07 p=.131
White	36.4% (36)	46.5% (79)	
Black	63.6% (63)	52.4% (89)	
Other	0% (0)	1.2% (2)	
SAMPLE %(N)			X^2=3.69 p=.158
Shock	31.3% (31)	40.6% (69)	
Dropouts	21.2% (21)	23.5% (40)	
Parole	47.5% (47)	35.9% (61)	
CRIME %(N)			X^2=7.01 p=.220
Robbery	29.4% (29)	19.4% (33)	
Other Violent	13.1% (13)	8.2% (14)	
Burglary	28.3% (28)	35.3% (60)	
Theft/Larceny	7.1% (7)	10.0% (17)	
Drugs	14.1% (14)	14.1% (24)	
Other	8.9% (8)	12.9% (22)	
SENTENCE LENGTH (months) M (SD)	42.0 (14.1)	41.6 (12.2)	t=-.27 p=.791
FACE-TO-FACE CONTACTS (months 1-3) M (SD)	19.2 (21.3)	7.85 (11.0)	t=-4.44 p=.0000

TABLE 2: A COMPARISON OF DRUG TESTED AND NON-DRUG TESTED OFFENDERS IN GEORGIA

	URINE TESTING		
	TESTED	NOT TESTED	
GEORGIA			
AGE M (SD) (at parole) (in years)	22.44 (2.53) N=36	21.76 (2.99) N=120	t=-1.24 p=0.218
RACE %(N)			
White	30.0% (15)	39.2% (69)	X^2=1.41
Black	70.0% (35)	60.8% (107)	p=.235
Other	0% (0)	0% (0)	
SAMPLE %(N)			
Shock	24.0% (12)	34.1% (60)	X^2=4.87
Parole	46.0% (23)	29.5% (52)	p=.087
Probation	30.0% (15)	36.4% (64)	
CRIME %(N)			
Robbery	8.0% (4)	8.1% (14)	
Other Violent	2.0% (1)	7.6% (13)	X^2=5.51
Burglary	32.0% (16)	26.2% (45)	p=.357
Theft/Larceny	12.0% (6)	20.3% (35)	
Drugs	36.0% (18)	24.6% (44)	
Other	10.0% (5)	12.2% (21)	
SENTENCE LENGTH (months) M (SD)	47.1 (31.3)	36.8 (30.8)	t=-2.08 p=.039
PRIOR ARRESTS %(N)	68.0% (17)	69.7% (46)	X^2=.025 p=.90

TABLE 3: A COMPARISON OF DRUG TESTED AND NON-DRUG TESTED OFFENDERS IN SOUTH CAROLINA

	URINE TESTING		
	TESTED	NOT TESTED	
SOUTH CAROLINA			
AGE M (SD) (at parole) (in years)	20.34 (1.89) N=25	21.36 (2.42) N=148	t=1.99 p=0.048
RACE %(N)			
White	50.0% (16)	42.9% (90)	X^2=.576
Black	50.0% (16)	57.1% (120)	p=.448
Other	0% (0)	0% (0)	
SAMPLE %(N)			
Shock	68.8% (22)	30.0% (63)	X^2=22.12
Parole	0% (0)	30.5% (64)	p=.000
Probation	31.2% (10)	39.5% (83)	
CRIME %(N)			
Robbery	3.1% (1)	3.3% (7)	
Other Violent	6.3% (2)	11.4% (24)	X^2=5.66
Burglary	12.5% (4)	16.7% (35)	p=.340
Theft/Larceny	28.1% (9)	36.1% (77)	
Drugs	37.5% (12)	19.5% (41)	
Other	12.5% (4)	12.4% (26)	
SENTENCE LENGTH (months) M (SD)	46.1 (18.2)	28.5 (20.0)	t=-4.71 p=.000
PRIOR ARRESTS %(N)	56.3% (18)	59.5% (125)	X^2=.123 p=.726
PRIOR CONVICTIONS %(N)	46.9% (15)	46.7% (98)	X^2=.001 p=.982

TABLE 4: A COMPARISON OF OFFENDER SAMPLES IN FLORIDA

		SAMPLE	
	SHOCK	DROPOUTS	PAROLE
FLORIDA			
DRUG TEST N (months 1-3)	No- 69(69.0%)	No- 40(65.6%)	No- 61(43.5%)
	Yes- 31(31.0%)	Yes- 21(34.4%)	Yes- 47(56.5%)
	X^2=3.69	p=.158	
DRUG TEST N (months 1-12)	No- 51(47.7%)	No- 31(47.7%)	No- 43(39.8%)
	Yes- 56(52.3%)	Yes- 34(52.3%)	Yes- 65(60.2%)
	X^2=1.658	p=.436	
TEST N RESULTS (months 1-3)	Neg- 28(87.5%)	Neg- 19(90.5%)	Neg- 36(83.7%)
	Pos- 4(12.5%)	Pos- 2(9.5%)	Pos- 7(16.3%)
	X^2=.594	p=.743	
TEST N RESULTS (months 1-12)	Neg- 40(74.1%)	Neg- 27(81.8%)	Neg- 50(76.9%)
	Pos- 14(25.9%)	Pos- 6(18.2%)	Pos- 15(23.1%)
	X^2=.693	p=.707	
ARRESTED N (months 1-12)	No- 57(50.9%)	No- 34(50.0%)	No- 46(42.2%)
	Yes- 55(49.1%)	Yes- 34(50.0%)	Yes- 63(57.8%)
	X^2=1.91	p=.384	
REVOKED N (months 1-12)	No- 83(74.1%)	No- 43(63.2%)	No- 67(61.5%)
	Yes- 29(25.9%)	Yes- 25(36.8%)	Yes- 42(38.5%)
	X^2=4.48	p=.106	
ABSCONDED N (months 1-12)	No- 83(74.1%)	No- 54(79.4%)	No-89(81.7%)
	Yes- 29(25.9%)	Yes- 14(20.6%)	Yes- 20(18.3%)
	X^2=1.92	p=.383	

TABLE 5: A COMPARISON OF OFFENDER SAMPLES IN GEORGIA

	SAMPLE		
	SHOCK	PAROLE	PROBATION
GEORGIA			
DRUG TEST (months 1-3)	No- 60(83.3%)	No- 52(69.3%)	No- 64(81.0%)
	Yes- 12(16.7%)	Yes- 23(30.7%)	Yes- 15(19.0%)
	X^2=4.87	p=.087	
DRUG TEST (months 1-12)	No- 53(65.4%)	No- 47(51.6%)	No- 58(67.4%)
	Yes- 28(34.6%)	Yes- 44(48.4%)	Yes- 28(32.6%)
	X^2=5.52	p=.063	
TEST RESULTS (months 1-3)	NO DATA		
TEST RESULTS (months 7-12)	Neg- 7(46.7%)	Neg- 14(53.8%)	Neg- 13(76.5%)
	Pos- 8(53.3%)	Pos- 12(46.2%)	Pos- 4(23.5%)
	X^2=3.36	p=.186	
ARRESTED (months 1-12)	No- 56(53.8%)	No- 47(47.0%)	No- 58(61.1%)
	Yes- 48(46.2%)	Yes- 53(53.0%)	Yes- 37(38.9%)
	X^2=3.87	p=.144	
REVOKED (months 1-12)	No- 75(72.1%)	No- 78(78.0%)	No- 76(80.0%)
	Yes- 29(27.9%)	Yes- 22(22.0%)	Yes- 19(20.0%)
	X^2=1.88	p=.389	
ABSCONDED (months 1-12)	No- 87(83.7%)	No- 83(83.0%)	No- 73(76.8%)
	Yes- 17(16.3%)	Yes- 17(17.0%)	Yes- 22(23.2%)
	X^2=1.81	p=.405	

TABLE 6: A COMPARISON OF OFFENDER SAMPLES IN SOUTH CAROLINA

		SAMPLE		
		SHOCK	PAROLE	PROBATION
SOUTH CAROLINA				
DRUG TEST (months 1-3)	No-	63(74.1%)	No- 63(98.4%)	No- 82(88.2%)
	Yes-	22(25.9%)	Yes- 1(1.6%)	Yes- 11(11.8%)
		X^2=22.11	p=.000	
DRUG TEST (months 1-12)	No-	60(35.9%)	No- 60(93.8%)	No-56(60.2%)
	Yes-	107(64.1%)	Yes- 4(6.3%)	Yes- 37(39.8%)
		X^2=62.38	p=.000	
TEST RESULTS (months 1-3)	Neg-	19(86.4%)	Neg- 1(100%)	Neg- 7(63.6%)
	Pos-	3(13.6%)	Pos- 0(0%)	Pos- 4(36.4)
		X^2=2.58	p=.275	
TEST RESULTS (months 1-12)	Neg-	80(74.8%)	Neg- 3(75.0%)	Neg- 21(56.8%)
	Pos-	27(25.2%)	Pos- 1(25.0%)	Pos- 16(43.2%)
		X^2=4.31	p=.116	
ARRESTED (months 1-12)	No-	82(48.5%)	No- 33(51.6%)	No- 44(47.3%)
	Yes-	87(51.5%)	Yes- 31(48.4%)	Yes- 49(52.7%)
		X^2=.283	p=.868	
REVOKED (months 1-12)	No-	138(81.7%)	No- 54(84.4%)	No- 61(65.6%)
	Yes-	31(18.3%)	Yes- 10(15.6%)	Yes- 32(34.4%)
		X^2=11.01	p=.004	
ABSCONDED (months 1-12)	No-	142(84.0%)	No- 54(84.4%)	No- 77(82.8%)
	Yes-	27(16.0%)	Yes- 10(15.6%)	Yes- 16(17.2%)
		X^2=.089	p=.956	

TABLE 7: RATES OF DRUG TESTING AND POSITIVE DRUG TESTS BY QUARTER

TESTING RATES OVER TIME

State	Time Period (in months) 1-3	4-6	7-9	10-12	Total
Florida					
total **N**	**269**	**205**	**142**	**81**	**280**
#tested(%)	99(36.8)	89(43.4)	58(40.8)	40(49.4)	155(55.4)
#positive(%)	13(13.1)	16(18.0)	14(24.1)	8(9.9)	35(22.5)
Georgia					
total **N**	**227**	**220**	**179**	**147**	**259**
#tested(%)	50(22.0)	58(26.4)	37(20.7)	41(27.9)	100(38.6)
#positive(%)	no data	no data	15(40.5)	14(34.1)	24(24.0)
South Carolina					
total **N**	**242**	**229**	**206**	**256**	**325**
#tested(%)	34(14.0)	65(28.4)	57(27.7)	93(36.3)	148(45.5)
#positive(%)	7(20.6)	17(26.2)	20(35.1)	25(25.3)	44(29.7)

TABLE 8: POSITIVE DRUG TEST RATES FROM DRUG USE FORECASTING DATA COMPARED TO POSITIVE TEST RATES IN FLORIDA, GEORGIA, AND SOUTH CAROLINA

DUF DATA COMPARED TO MULTI-STATE DATA

Location	%-Positive drug tests
Ft. Lauderdale (DUF)	61
Miami (DUF)	68
Florida (months 1-3)	13.1
Florida (months 1-12)	22.5
Atlanta (DUF)	63
Georgia (months 1-3)	NO DATA
Georgia (months 7-12)	24
South Carolina (months 1-3)	20.6
South Carolina (months 1-12)	29.7

TABLE 9: LOGISTIC REGRESSION EXAMINING ARRESTS AS A FUNCTION OF DRUG TESTING, OFFENDER ORIGIN AND DEMOGRAPHICS

ARRESTS AND DRUG TESTING

State	Months 1-3			Months 1-12		
	B	(SE)	p	B	(SE)	p
Florida	N=210			N=211		
drug test	-1.46	(.41)	.00**	-.73	(.40)	.07*
age	-.0007	(.0003)	.01**	-.0007	(.0002)	.00**
sentence	.03	(.01)	.03**	.03	(.01)	.03**
contact	-.0084	(.01)	.55	-.02	(.01)	.12
parole	1.27	(.46)	.01**	1.31	(.52)	.01**
dropout	.45	(.46)	.32	.50	(.51)	.33
(shock)(drugtest)	.54	(.66)	.41	.52	(.61)	.40
Georgia	N=156			N=181		
drug test	-.42	(.50)	.40	.33	(.42)	.43
age	-.0004	(.0002)	.02**	-.0004	(.0002)	.05**
parole	.41	(.80)	.61	.16	(.74)	.83
probation	.92	(.97)	.34	.74	(.96)	.44
sentence	.00	(.01)	.63	.003	(.01)	.76
(shock)(drugtest)	.66	(.83)	.42	.07	(.65)	.92
South Carolina	N=173			N=256		
drug test	.30	(1.31)	.82	.68	(.75)	.36
age	-.0002	(.0002)	.39	-.0003	(.0002)	.08*
parole	-.02	(.56)	.99	-.35	(.38)	.36
probation	.28	(60)	.63	-.27	(.69)	.69
sentence	.01	(.01)	.38	.009	(.006)	.16
(shock)(drugtest)	-.56	(1.40)	.69	-1.42	(.82)	.09*

*- The noted value is significant at the .10 level
**- The noted value is significant at the .05 level

Table 9A: PERCENTAGE OF OFFENDERS ARRESTED IN SOUTH CAROLINA BASED ON DRUG TESTING AND OFFENDER SAMPLE

PERCENT OF OFFENDERS ARRESTED
%(N)

N=325 Drug Testing	Sample		
	Shock	Parole	Probation
Yes	44.6%*(45)	100%(2)	52.8%(19)
No	61.2%(41)	46.8%(29)	52.6%(30)

*- Significantly less likely to be arrested in logistic regression model Table 9.

Note- The number of cases in this table differ from the number found in the logistic regression model due to missing data on one or more of the control variables in the model.

TABLE 10: LOGISTIC REGRESSION EXAMINING ARREST AS A FUNCTION OF TEST RESULTS, OFFENDER ORIGIN AND DEMOGRAPHICS

ARRESTS AND POSITIVE DRUG TESTS

State	Months 1-3 B (SE) p	Months 1-12 B (SE) p
Florida	N=79	N=123
test result	.47 (.87) .59	.18 (.57) .75
age	-.0009 (.0004) .04**	-.0007 (.0003) .02**
contact	-.01 (.02) .41	-.01 (.01) .18
parole	.44 (.67) .51	.78 (.56) .16
dropout	-.45 (.71) .53	-.17 (.57) .76
sentence	.03 (.02) .13	.02 (.02) .13
(shock)(result)	-1.40(1.58) .37	.15 (.90) .87
Georgia	NO DATA	N=45
test result		.45 (.88) .61
age		-.0002 (.0004) .65
parole		-.47 (2.03) .82
probation		7.21 (30.16) .81
sentence		.005 (.02) .84
(shock)(results)		-.20 (1.49) .89
South Carolina	N=27@	N=127
test results	18.53 (99.03) .85	-.36 (.96) .71
age	.0004 (.0008) .64	-.0001 (.0002) .54
parole	9.04 (99.63) .93	1.97 (1.22) .11
probation	-9.97 (69.62) .89	1.07 (.77) .16
sentence	-.006 (.04) .88	.01 (.01) .10*
(shock)(results)	-17.80(99.03) .86	.64 (1.06) .55

*- The noted value is significant at the .10 level
**- The noted value is significant at the .05 level
@- Note small numbers for this analysis

TABLE 11: LOGISTIC REGRESSION EXAMINING ABSCONDING AS A FUNCTION OF DRUG TESTING, OFFENDER DISPOSITION, AND DEMOGRAPHICS

ABSCONDING AND DRUG TESTING

State	Months 1-3			Months 1-12		
	B	(SE)	p	B	(SE)	p
Florida	N=210			N=211		
drug test	-.16	(.51)	.76	-.66	(.50)	.18
age	.0003	(.0003)	.32	.0003	(.0003)	.30
contact	-.02	(.02)	.19	-.02	(.02)	.28
sentence	-.02	(.02)	.30	-.02	(.02)	.24
parole	-.50	(.51)	.32	-.29	(.56)	.60
dropout	-.30	(.54)	.57	-.06	(.59)	.92
(shock)(drugtest)	.43	(.74)	.56	.84	(.70)	.23
Georgia	N=156			N=181		
drug test	-2.05	(1.07)	.06*	-.97	(.55)	.08*
age	-.0005	(.0003)	.07*	-.0002	(.0002)	.28
sentence	.005	(.01)	.74	.002	(.01)	.85
parole	.56	(1.03)	.58	.43	(.91)	.64
probation	.17	(1.08)	.87	.47	(1.05)	.66
(shock)(drugtest)	3.05	(1.30)	.02**	1.07	(.80)	.18
South Carolina	N=173			N=256		
drug test	.14	(1.40)	.92	-.45	(.85)	.60
age	.0001	(.0003)	.66	.0001	(.0002)	.57
sentence	.03	(.02)	.06*	.01	(.01)	.14
parole	1.00	(.80)	.21	-.42	(85)	.38
probation	.99	(.73)	.17	.24	(.77)	.75
(shock)(drugtest)	-.96	(1.61)	.55	-1.12	(.97)	.25

*- The noted value is significant at the .10 level
**- The noted value is significant at the .05 level

Table 11A: PERCENTAGE OF OFFENDERS ABSCONDING IN GEORGIA BASED ON DRUG TESTING AND OFFENDER SAMPLE

PERCENT OF OFFENDERS ABSCONDING
%(N)

N=226 Drug Testing	Sample		
	Shock	Parole	Probation
Yes	33.3%*(4)	4.3%(1)	20.0%(3)
No	18.3%(11)	23.0%(12)	29.7%(19)

*- Significantly more likely to abscond in logistic regression model Table 11.

Note- The number of cases in this table differ from the number found in the logistic regression model due to missing data for one or more of the control variables in the model.

TABLE 12: LOGISTIC REGRESSION EXAMINING ABSCONDING AS A FUNCTION OF DRUG TEST RESULTS, OFFENDER ORIGIN, AND DEMOGRAPHICS

ABSCONDING AND POSITIVE DRUG TESTS

State	Months 1-3 B	(SE)	p	Months 1-12 B	(SE)	p
Florida	N=79			N=123		
test result	.16	(1.21)	.90	-.07	(.86)	.93
age	.00002	(.0005)	.97	.0001	(.0004)	.76
contact	-.01	(.02)	.58	.002	(.02)	.89
sentence	-.05	(.03)	.10*	-.05	(.03)	.07*
parole	-1.80	(.88)	.04**	-1.56	(.78)	.04**
dropout	-.62	(.75)	.41	-.19	(.69)	.79
(shock)(result)	-.20	(1.78)	.91	1.72	(1.16)	.14
Georgia	NO DATA			N=45		
test result				-.93	(1.03)	.37
age				-.0006	(.0005)	.21
sentence				.02	(.03)	.41
parole				-.18	(2.55)	.94
probation				-7.06	(29.31)	.81
(shock)(result)				2.46	(1.71)	.15
South Carolina	N=27@			N=127		
test results	7.05	(106.65)	.95	1.47	(1.29)	.25
age	.002	(.002)	.29	.0003	(.0003)	.31
sentence	.12	(.17)	.48	-.007	(.01)	.60
parole	16.39	(164.31)	.92	1.95	(1.18)	.10*
probation	-4.51	(106.81)	.97	-.15	(1.27)	.90
(shock)(results)	-4.27	(106.64)	.97	-.31	(1.44)	.83

*- The noted value is significant at the .10 level
**- The noted value is significant at the .05 level
@- Note small numbers for analysis

TABLE 13: LOGISTIC REGRESSION EXAMINING REVOCATION AS A FUNCTION OF DRUG TESTING, OFFENDER ORIGIN AND DEMOGRAPHICS

REVOCATION AND DRUG TESTING

State	Months 1-3 B (SE) p	Months 1-12 B (SE) p
Florida	N=210	N=211
drug test	-.58 (.41) .16	-.36 (.40) .37
age	-.0005 (.0003) .06*	-.0005 (.0003) .05**
contact	-.003 (.01) .80	-.006 (.01) .56
sentence	.02 (.01) .17	.02 (.01) .17
parole	.99 (.46) .03**	1.18 (.55) .03**
dropout	.42 (.47) .37	.61 (.55) .27
(shock)(drugtest)	-.39 (.80) .62	.23 (.67) .73
Georgia	N=156	N=181
drug test	.29 (.56) .60	.34 (.49) .48
age	-.0002 (.0002) .32	-.0002 (.0002) .35
sentence	.0008 (.01) .94	.004 (.01) .72
parole	-.21 (.89) .81	-.69 (.86) .42
probation	-1.36 (1.22) .26	-1.77 (1.23) .15
(shock)(drugtest)	.57 (.86) .51	-.08 (.69) .91
South Carolina	N=173	N=256
drug test	1.16 (1.33) .38	.27 (.78) .73
age	.00003 (.0002) .91	-.0002 (.0002) .26
sentence	.02 (.01) .23	.02 (.008) .01**
parole	-.01 (.69) .99	-.09 (.49) .86
probation	.82 (.65) .21	.92 (.75) .22
(shock)(drugtest)	-.89(1.43) .53	-1.01 (.88) .25

*- The noted value is significant at the .10 level
**- The noted value is significant at the .05 level

TABLE 14: LOGISTIC REGRESSION EXAMINING REVOCATION AS A FUNCTION OF TEST RESULTS, OFFENDER ORIGIN AND DEMOGRAPHICS

REVOCATION AND POSITIVE DRUG TESTS

State	Months 1-3 B	(SE)	p	Months 1-12 B	(SE)	p
Florida	N=79			N=123		
test result	-.86	(1.15)	.45	-1.02	(.71)	.15
age	-.0006	(.0005)	.20	-.0006	(.0003)	.11
contact	.01	(.01)	.48	-.005	(.01)	.68
sentence	.005	(.02)	.80	.01	(.02)	.60
parole	1.10	(.79)	.16	1.40	(.66)	.03**
dropout	.94	(.83)	.26	.79	(.67)	.24
(shock)(result)	1.71	(1.77)	.33	2.06	(1.06)	.05**
Georgia	NO DATA			N=45		
test result				2.21	(1.06)	.04**
age				.0007	(.0004)	.13
sentence				.02	(.03)	.41
parole				-.18	(2.55)	.94
probation				-7.06	(29.31)	.81
(shock)(results)				2.46	(1.72)	.15
South Carolina	N=27@			N=127		
test results	19.81	(161.86)	.90	.35	(1.01)	.72
age	-.0004	(.001)	.68	-.0005	(.0004)	.16
sentence	.03	(.05)	.55	.03	(.01)	.01**
parole	11.98	(164.26)	.94	2.61	(1.50)	.08*
probation	-7.42	(114.16)	.95	2.94	(1.06)	.01**
(shock)(results)	-8.60	(187.45)	.96	1.39	(1.21)	.25

*- The noted value is significant at the .10 level
**- The noted value is significant at the .05 level
@- Note small numbers in analysis

Table 14A: PERCENTAGE OF OFFENDERS REVOKED IN FLORIDA BASED ON DRUG TEST RESULTS AND OFFENDER SAMPLE

PERCENT OF OFFENDERS REVOKED
%(N)

N=152 Drug Test	Sample		
	Shock	Dropout	Parole
Positive	35.7%*(5)	33.3%(2)	20.0%(3)
Negative	17.5%(7)	29.6%(8)	42.0%(21)

*- Significantly more likely to be revoked in logistic regression model Table 14.

Note- The number of cases in this table differ from the number found in the logistic regression model due to missing data on one or more of the control variables in the model.

WORKS CONSULTED

Allison, M. & Hubbard, R. L. (1985). Drug abuse treatment process: a review of the literature. International Journal of the Addictions, 20(9), 1321-1345.

Anglin, M. D. (1988). The efficacy of civil commitment in treating narcotics addiction. Journal of Drug Issues, 18(4), 527-545.

Anglin, M. D., Brecht, M. L., & Maddahian, E. (1989). Pretreatment characteristics and treatment performance of legally coerced versus voluntary methadone maintenance admissions. Criminology, 27(3), 537-557.

Anglin, M. D. & Hser, Y. I. (1990). Treatment of drug abuse. In M. Tonry & J. Q. Wilson (Ed.), Drugs and crime (pp. 393-460). Chicago: University of Chicago Press.

Ashford, J. B. (1988). Assessing treatability in drug offenders. Behavioral Sciences and the Law, 6(1), 138-148.

Austin, G. A. & Letteri, D. J. (Ed.). (1977). Drug users and the criminal justice system (DHEW Publication No. 77-510). Washington, DC: U.S. Government Printing Office.

Botvin, G. J. (1990). Substance abuse prevention: theory practice, and effectiveness. In M. Tonry & J. Q. Wilson (Ed.), Drugs and crime (pp. 461-519). Chicago: University of Chicago Press.

Bureau of Justice Assistance (1991). Directory of state-identified intervention/treatment programs for drug dependent offenders (NCJ Report No. 130581). Washington, DC: U.S. Department of Justice.

Collins, J. J. & Allison, M. (1983). Legal coercion and retention in drug abuse treatment. Hospital and Community Psychiatry, 34(12), 1145-1149.

Craig, R. J. (1984). Can personality tests predict treatment dropouts? International Journal of the Addictions, 19(6), 665-674.

Darabi, G. A. (1992). Tier programs evaluation: a recommitment study. Tallahassee, FL: Florida Department of Corrections.

DeLeon, G. (1988). Legal pressure in therapeutic communities. Journal of Drug Issues, 18(4), 625-640.

DeLeon, G. (1985). The therapeutic community: status and evolution. International Journal of the Addictions, 20(6&7), 823-844.

DeLeon, G., Andrews, M., Wexler, H. K., Jaffe, J., & Rosenthal, M. S. (1979). Therapeutic community dropouts: criminal behavior five years after treatment. American Journal of Drug and Alcohol Abuse, 6(3), 253-271.

DeLeon, G., Holland, S., & Rosenthal, M. S. (1972). Phoenix house: criminal activity of dropouts. Journal of the American Medical Association, 222(6), 686-689.

Dembo, R., Williams, L., & Wish, E. D. (1990). Urine testing of detained juveniles to identify high-risk youths. Rockville, MD: National Institute of Justice.

Falco, M. (1992). The making of a drug-free America. New York: Times Books.

Field, G. (1989). The effects of intensive treatment on reducing the criminal recidivism of addicted offenders. Federal Probation, 53(4), 51-56.

Foti, C. C. (1993). The effect of drug testing in New Orleans. Rockville, MD: National Institute of Justice.

Gendreau, P. & Andrews, D. A. (1990). Tertiary prevention: what the meta-analysis of the offender treatment literature tell us about "what works." Canadian Journal of Criminology, 32(1), 173-184.

Gendreau, P. & Ross, B. (1979). Effective correctional treatment: biotheraphy for cynics. Crime and Delinquency, 25(4), 463-489.

Gendreau, P. & Ross, R. R. (1987). Revivification of rehabilitation: evidence from the 1980's. Justice Quarterly, 4(3), 349-408.

Goldstein, A., Horns, W. H., & Hansteen, R. W. (1977). Is on site urine testing of therapeutic value in a methadone treatment program? International Journal of the Addictions, 12(6), 717-728.

Grabowski, J., Stitzer, M. L., & Henningfield, J. E. (Ed.). (1984). Behavioral intervention techniques in drug abuse treatment (DHHS Publication No. ADM 84-1282). Washington, DC: U.S. Government Printing Office.

Hansen, H. J., Caudill, S. P., & Boone, J. (1985). Crisis in drug testing. Journal of the American Medical Association, 253(16), 2382-2387.

Hawks, R. & Chiang, C. N. (Ed.). (1986). Urine testing for drugs of abuse (DHHS Publication No. ADM 87-1481). Washington, DC: U.S. Government Printing Office.

Hayes, T. J. & Schimmel, D. J. (1993). Residential drug abuse treatment in the Federal Bureau of Prisons. Journal of Drug Issues, 23(1), 61-73.

Husband, S. D. & Platt, J. J. (1993). The cognitive skills component in substance abuse treatment in correctional settings: a brief review. Journal of Drug Issues, 23(1), 31-42.

Inciardi, J. A. (1988). Compulsory treatment in New York: a brief narrative history of misjudgement, mismanagement, and misrepresentation. Journal of Drug Issues, 18(4), 547-560.

Inciardi, J. A., Lockwood, D., & Quinlan, J. A. (1993). Drug use in prison: patterns, processes and implications for treatment. Journal of Drug Issues, 23(1), 119-129.

Inciardi, J. A. & Martin, S. S. (1993). Drug abuse treatment in criminal justice settings. Journal of Drug Issues, 23(1), 1-6.

Krashegor, N. (Ed.). (1979). Behavioral analysis of substance abuse (DHEW Publication No. 79-839). Washington, DC: U.S. Government Printing Office.

Leukefield, C. G. & Tims, F. M. (1990). Compulsory treatment for drug abuse. The International Journal of the Addictions, 25(6), 621-640.

Leukefield, C. G. & Tims, F. M. (Ed.). (1992). Drug abuse treatment in prisons and jails (DHHS Publication No. ADM 92-1884). Washington, DC: U.S. Government Printing Office.

Loza, W. (1992, November). Substance abusing offenders require a unique program. Paper presented at the annual meeting of the American Society of Criminology, New Orleans, LA.

MacKenzie, D. L. & Souryal, C. (1992). Inmate attitude change during incarceration: a comparison of boot camp and traditional prison. (Available from [Dr. MacKenzie, University of Maryland, Department of CCJS, 2220 LeFrak Hall, College Park, MD, 20742]).

MacKenzie, D. L. & Brame, R. (1993). Shock incarceration and positive adjustment during community supervision: a multi site evaluation. (Available from [Dr. MacKenzie, University of Maryland, Department of CCJS, 2220 LeFrak Hall, College Park, MD, 20742]).

Martin, S. S. (1993). An intensive case management approach for paroled IV drug users. Journal of Drug Issues, 23(1), 43-59.

Mieczkowski, T., Landress, H. J., Newel, R., & Coletti, S. D. (1993). Testing hair for illicit drug use. Rockville, MD: National Institute of Justice.

Morris, N. & Tonry, M. (1990). Between prison and probation: intermediate punishments in a rational sentencing system. New York: Oxford University Press.

National Institute of Justice. (1993). Search for answers: annual evaluation report on drugs and crime 1992. Rockville, MD: National Institute of Justice.

National Institute of Justice. (1992). Drug use forecasting: 1991 annual report. Rockville, MD: National Institute of Justice.

Pelissier, B. & Owen, B. (1989). BOP programs fight drugs and recidivism. Corrections Today, 51(3), 90-94.

Peters, R. H., May, R. L., & Kearns, W. D. (1992). Drug treatment in jails: results of a nationwide survey. Journal of Criminal Justice, 20(4), 283-295.

Platt, J. J., Buhringer, G., Kaplan, C. D., Brown, B. S., & Taube, D. O. (1988). The prospects and limitations of compulsory treatment for drug addiction. Journal of Drug Issues, 18(4), 505-525.

Rouse, J. J. (1991). Evaluation research on prison-based drug treatment programs and some policy implications. The International Journal of the Addictions, 26(1), 29-44.

Salmon, R. W. & Salmon, R. J. (1983). The role of coercion in rehabilitation of drug abusers. The International Journal of the Addictions, 18(1), 9-21.

Simpson, D. D., Joe, G. W., Lehman, W. E. K., & Sells, S. B. (1986). Addiction careers: etiology, treatment, and 12-year follow-up outcomes. Journal of Drug Issues, 16(1), 107-121.

Tims, F. M. & Leukefield, C. G. (Ed.). (1986). Relapse and recovery in drug abuse (DHHS ADM 86-1473). Washington, DC: U.S. Government Printing Office.

Turner, S., Petersilia, J., & Deschenes, E. P. (1994). The implementation and effectiveness of drug testing in community supervision: results of an experimental evaluation. In D. L. MacKenzie & C. D. Uchida (Ed.), Drugs and Crime: Evaluating Public Policy Initiatives (pp. 231-252). Thousand Oaks, CA: Sage.

Vito, G. F. (1989). War on drugs: Kentucky program shows we need treatment and rehabilitation in our arsenal. Correction Today, 51(3), 34-36.

Walters, G. D., Heffrom, M., Whitaker, D., & Dial, S. (1992). The CHOICE program: a comprehensive residential treatment program for drug-involved offenders. International Journal of Offender Therapy, 36(1), 21-29.

Wallace, S., Pelissier, B., McCarthy, D., & Murray, D. (1990). Beyond nothing works. Federal Prisons Journal, 1(4), 22-26.

Wellisch, J., Anglin, M. D., & Prendergast, M. L. (1993). Numbers and characteristics of drug using women in the criminal justice system: implications for treatment. Journal of Drug Issues, 23(1), 7-30.

Wilson, J. Q. (1990). Drugs and crime. In M. Tonry & J. Q. Wilson (Ed.), Drugs and crime, (pp 521-545). Chicago: University of Chicago Press.

Wish, E. D., Cuadrado, M., & Martorana, J. A. (1986). Estimates of drug use in intensive supervision probationers: results from a pilot study. Federal Probation, 50(4), 4-16.

Wish, E. D. & Grapper, B. A. (1990). Drug testing by the criminal justice system: methods, research, and applications. In M. Tonry & J. Q. Wilson (Ed.) Drugs and crime (pp. 321-392). Chicago: University of Chicago Press.

Wish, E. D. & Polsenberg, C. (1993, October). Arrestee urine tests and self-reports of drug use: which is more related to rearrest? Paper presented at the American Society of Criminology Annual Meeting, Phoenix, AZ.